

REMARKS

Introduction

Claims 9, 11, and 13-16 are currently pending.

Reconsideration is respectfully requested based on the following.

Rejections of Claims under 35 U.S.C. §102(b)

Claims 9, 11, and 14-16 stand rejected under 35 U.S.C. §102(b) as being anticipated by Japanese Patent No. JP 408155670A (hereinafter referred to as “JP ‘670”). Claims 9, 11, and 14-16 also stand rejected under 35 U.S.C. §102(b) as being anticipated by Japanese Patent No. JP 06000684A (hereinafter referred to as “JP ‘684”). Applicants respectfully submit that the present rejections are improper because both JP ‘670 and JP ‘684 fail to identically disclose all of the claimed limitations of claims 9, 11, and 14-16.

To anticipate a claim under 35 U.S.C. §102, a single prior art reference must identically disclose each and every claim feature. See Lindeman Machinenfabrik v. American Hoist and Derrick, 730 F.2d 1452, 1458 (Fed. Cir. 1984). If any claim feature is absent from a prior art reference, it cannot anticipate the claim. See Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997).

In JP ‘670 A, a device is introduced that makes possible laser drilling of, or laser removing from a workpiece. In this context, according to the Abstract and Figures 1 and 3, at least two electrodes (“base electrode 2” or “substrate electrode 2” and “opposite electrode 3”) are provided which are connected to each other using a current-voltage source, in order to generate an electrical field (“power source 11 is connected to each electrode”). Workpiece W itself is not connected electrically to the current-voltage source, but is situated on substrate electrode 2.

By contrast, according to claim 9, the recited device has an electrode not having a separate counter-electrode. Instead, a current-voltage source is electrically interconnected directly between the workpiece and the one electrode. This is possible since the workpiece, according to claim 9, is electrically conductive (“...the current-voltage source being interconnected between an electrically conductive workpiece and the electrode...”). From Figures 1 and 2 it may also be seen that the workpiece itself is connected to the current-voltage source. Therefore, the device according to claim 9 is novel compared to JP ‘670.

The same argumentation applies also to JP '684. As may be recognized from Figure 2, a voltage is applied between two separate electrodes ("Voltage is applied between electrode (7) and mask electrode (6)...", Abstract), while workpiece (1), that is to be processed, lies on an electrode. A device in which a current-voltage source is electrically interconnected between a workpiece and an electrode is also not taught by JP '684.

In both of the above-discussed references the possibility of using the workpiece itself as an electrode is neither discussed nor indicated. In JP '684 this would anyhow not make sense since the processing of a PGA housing is provided, which is usually made of a non-conducting material.

The following technical advantages result from the claimed invention: On the one hand, by refraining from the use of a substrate electrode, the claimed device offers a technically simple and cost-effective construction. On the other hand, problems are completely avoided that may be caused by a bad electrical and/or mechanical contact between the substrate electrode and the workpiece, since according to claim 9, the workpiece is contacted directly to the current-voltage source, and is consequently used itself as an electrode. If the electrical contacting between the substrate electrode and the workpiece is not fully ensured, for example, by contamination on the substrate electrode, then the workpiece itself is not electrically charged, as required by claim 9. As a result, the acceleration a of the ions in the electrical field is reduced, since then, as the distance d between the electrodes, the distance between the substrate electrode and the counter-electrode is to be considered, and not the shorter distance between the surface of the workpiece and the counter-electrode (see the formula in the table in page 5 of the specification).

Even if the electrical contacting between the substrate electrode and the workpiece were fully ensured, bringing into contact the workpiece with the substrate electrode corresponds physically to an interference with the original electrical field between the two electrodes, since the electrical field is changed by the workpiece. Therefore, it must be assumed that the electrical field changes even at the effective location on the workpiece, and thus makes more difficult a controlled processing of the workpiece.

CONCLUSION

In view of the foregoing, it is respectfully submits that all of claims 9, 11, and 13-16 are allowable. Prompt reconsideration and allowance of the present application are therefore respectfully requested.

Respectfully submitted,

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